



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/772,429 | 02/06/2004 | Tomohiro Kondo | 040302-0378 | 6123 |

22428 7590 09/29/2008
FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

| |
|----------|
| EXAMINER |
|----------|

SHAKERI, HADI

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3723

| | |
|-----------|---------------|
| MAIL DATE | DELIVERY MODE |
|-----------|---------------|

09/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/772,429
Filing Date: February 06, 2004
Appellant(s): KONDO ET AL.

Martin J. Cosenza
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 7, 2008 appealing from the Office action mailed December 7, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect.

No amendment after final has been filed on March 5, 2008, only request for reconsideration.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Art Unit: 3723

4,682,444

JUDGE ET AL

7-1987

10-217090

HIRAYAMA ET AL

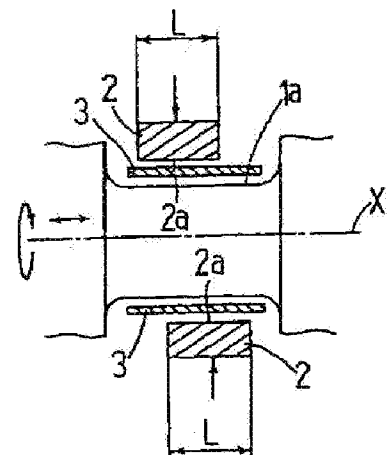
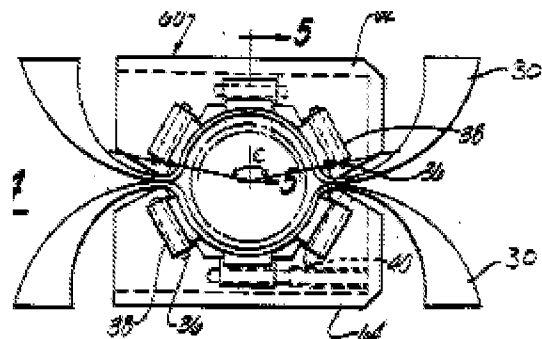
8-1998

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3, 9, 10, 26 and 27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Judge et al. (4,682,444) in view of JP Pub. 10-217090.

Judge et al. meets all of the limitations of the above claims, e.g., a surface finishing apparatus comprising a workpiece supporting mechanism (Fig. 1); a surface finishing tool (30-34) adapted to be in abutting contact with the workpiece; a pressure applying mechanism to apply pressure force to the tool (04:18-26); and a drive mechanism to rotate the workpiece (04:04); shifting mechanism cyclically moving one of workpiece or the tool (04:10-14); tape being a coated abrasive contacting the workpiece (05:26) and the pressure applying mechanism comprising a plurality of shoes (36); workpiece being a crankshaft; the tape being non-extensible and deformable, e.g., Fig. 4., except for disclosing the arrangement of shoes to be partially overlapping at the central region and non-overlapping at the terminal regions.



JP' 090 teaches preventing local excessive polishing by different arrangements of the shoes. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of Judge et al. with the offset arrangement as taught by JP' 090 to prevent local excessive shaving.

(10) Response to Argument

As a preliminary matter it is noted that Appellants presented the claim chart with a request for reconsideration on March 5, 2008 after the final rejection and when the prosecution was closed. Examiner considered the arguments and issued a PTOL-303, since the arguments were not persuasive.

Appellants assert that the combination of Judge with JP'090 does not teach or suggest A) an apparatus with the offset displacement of each of the plurality of shoes is set to be less than a given oscillation stroke; and B) an apparatus wherein the pressure applying mechanism is adapted to hold the shoes such that the workpiece may be lapped to obtain a "target shaped periphery having a surface profile formed in the mid-concave profile having a depth equal to or greater than 5 micron and equal to or less than 20 micron.

Appellant argues that Examiner has ignored the recitation of "intended use" and the "adapted to" language. Examiner agrees with the assertion that functional claim language connotes structural recitations which must be considered in evaluating the patentability of an invention in view of prior art. Examiner has been emphasizing this point through the prosecution, however, Examiner still believes that the language as recited fails to place the claims allowable over prior art, because the apparatus of prior

Art Unit: 3723

art is capable of being used for the recited intended use and further it is capable of being adapted to, in fact the pressure applying mechanism is modified in view of JP`090 or "adapted to" operatively hold the shoes on the rear side of the lapping film in different contact areas in a partially overlapping relationship in a center region (e.g., Fig. 2, JP`090) of the target shaped periphery of the workpiece with an offset displacement of each of the plurality of shoes set to be less than the given oscillating stroke, i.e., setting the parameters of the apparatus, e.g., offset less than the oscillation is considered by the examiner to be obvious to one of ordinary skill in the art is optimizing the operation based on intended results, as such modification would only require routine experimentations which yield predictable results. If a person of ordinary skill using the combined prior art apparatus were to obtain uniform polishing surface on a workpiece that has a concave mid-portion, the artisan would have been able in view of JP`090 to set the oscillation and/or set the positions of the shoes such that excessive shaving is avoided.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, JP`090 teaches

Art Unit: 3723

positioning the shoes in solving prior art problems wherein the shoes strongly hit the surface of work at both ends of the stork S, so that uniform shaving is achieved.

In response to applicant's argument that JP`090 is concerned with straight surfaces and not concave workpieces, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Applying this teaching (uniform shaving) to workpieces having a mid-concave portion as well as workpiece having straight portion would still be within the scope disclosed by JP`090, or at least it would have been suggested to one of ordinary skill in the art, since preventing local excessive shaving is the main point of the teaching, which may occur in both straight and concave surfaces.

The arguments with regards to achieving a surface with a depth between or equal to 5 to 20 micron inclusive, are not persuasive, since again the claims are reciting a desired finish, which any similar and commonly used apparatus is capable of achieving by setting variables like, time of polishing, type of polishing papers, polishing solution which may be introduced, pressure applied, etc. This does not render Judge unsatisfactory with its intended purpose. Similar to the instant invention Judge is concerned with polishing of engine crankshafts (01:23). Judge also discloses the importance of the rate of lateral oscillation of upper and lower shoes (06:11-13) in

Art Unit: 3723

uniform polishing of the surface. There is no cause for not applying the reference to non-convex surfaces.

The claim chart as presented by the Appellant had been filled in by Judge in view of JP'090 (Fig. 2 and Abstract) with routine experimentations with predictable results reasoning as applied by the examiner, i.e., " an oscillating mechanism . . . to allow the workpiece to be surface finished in the mid-concave profile, [a component] adapted to operatively hold the plurality of shoes on the rear side of the lapping film in different contact areas in a partially overlapping relationship at a central region of the target shaped periphery of the workpiece and in non-overlapping relationship in both terminal reset shaped periphery such that the plurality of shoes are held in opposing offset positions [JP'090 Fig. 2] with offset displacement of each of the plurality of shoes set to be less than the given oscillation stroke provided by the oscillating mechanism [routine experimentations with predictable results]. Applying the prior art apparatus wherein the stroke and positions of the shoes are set for achieving uniform polishing to a workpiece with mid-concave profile would have been obvious to one of ordinary skill in the art.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Hadi Shakeri/

Primary Examiner, Art Unit 3723

Conferees:

/Joseph J. Hail, III/

Supervisory Patent Examiner, Art Unit 3723

/Boyer D. Ashley/

Supervisory Patent Examiner, Art Unit 3724